Polymers under Multiple Constraints

Kolloquium

Thursday,

11th December 2014

at: **5.00 pm**

Hörsaal für Theoretische Physik
Linnéstr. 5
04103 Leipzig

Coffee will be served from 4.30 pm!

Prof. Walter Richtering

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Are complex microgels special?

Multi-sensitive, “smart” microgels display a variety of properties that distinguish them from rigid colloidal particles. The swelling of the soft particles can be controlled via the chemical composition as well as the morphology of the particle. Due to the chemical structure of the microgels, their size can respond to variations, e.g., of temperature, pH, pressure or solvent composition. The porosity of the microgels further allows for the uptake and release of guest species, which can be controlled by external stimuli.
The softness enables the microgels to adapt their shape to geometric constraints at interfaces. The behaviors of microgels at fluid interfaces are distinctly different from that of common colloids. It is possible to prepare emulsions the stability of which can be switched enabling e.g. new opportunities in biocatalysis.

We will discuss, how chemical composition as well as morphology allows tuning the sensitivity of microgels leading to unique properties that on the one hand provide many opportunities for various applications, and on the other hand require new theoretical concepts.